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Description of a New Crab from Kushimoto, the Kii Peninsula, Southwest Japan

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In the present paper is described a new crab referred to the genus *Globopilumnus*, the representatives of which are close to the species of the Pilumnidae in their general formation of the carapace, chelipeds and ambulatory legs. Several genera including the genus in question are characteristic in having the whip-like long male second pleopods and have been considered to represent a natural group as one of the sub-families of the Xanthidae since the excellent papers of BALSS (1932, 1933). The current studies may appoint it to the familial rank as the Menippidae, although the discussion on this problem is not always fully matured.

The new species is the sixth in *Globopilumnus* and readily distinguished from the known five species by its characteristic tomentum with a more or less labyrinth appearance. The type-specimens of the new species are preserved in the National Science Museum, Tokyo (NSMT) and the Seto Marine Biological Laboratory, Kyoto University (SMBL).

Genus *Globopilumnus* BALSS, 1933

Globopilumnus kiiensis sp. nov.

[New Jap. name: Kii-marumi-kebukagani]

(Figs. 1, 2)

Description. Carapace slightly broader than long, rather rounded and evenly convex fore and aft; dorsal surface very thickly covered with short soft hairs so as to be distinctly velvet-like, true surface being observed only with removal of them; one or two longish setae on each areola; deep symmetrical grooves make a more or less labyrinth appearance; protogastric region rather small, with a median longitudinal depression, its inner part being nearly continuous with oblong epigastric region; meso- and metagastric regions united together, only with a pair of rod-like groove on their median part, being transversely diamond-shaped; cardiac and intestinal re-

gions only shallowly isolated and longitudinally diamond-shaped as a whole, its anterior end being confluent with metagastric region; an oblique rectangular areola at posterolateral part of transverse diamond or at anterolateral part of longitudinal diamond, and thus a large longitudinal diamond is formed on median part of carapace; anterolateral areola deeply isolated laterally from protogastric region and posterolaterally from large diamond mentioned above, and traversed by two oblique deep grooves parallel to anterolateral border of carapace. On denudation, dorsal surface of carapace quite smooth and ill-defined, only with very shallow interregional furrows, in spite of distinct grooves made by tomentum.

Front strongly declivous, being deeply incised medially; inner end of each lobe just outside the median notch most strongly produced, rather angulated and fringed with several setae of variable length; frontal and supraorbital borders directly continuous, without interruption or depression, but with sharp angle. Supraorbital border not raised at all, having two shallow depressions; infraorbital border fringed with setae, and bears a shallow depression just under external orbital angle which is not prominent at all. Basal segment of antenna very short, filling only proximal half of hiatus between front and infraorbital angle; second segment freely movable in distal half of hiatus. Eyestalk densely covered with a velvet-like tomentum and embedded in deep fossa, cornea being chiefly ventral. Subhepatic region unarmed.

Anterolateral border of carapace with an arched wide lobe and a granule-tipped

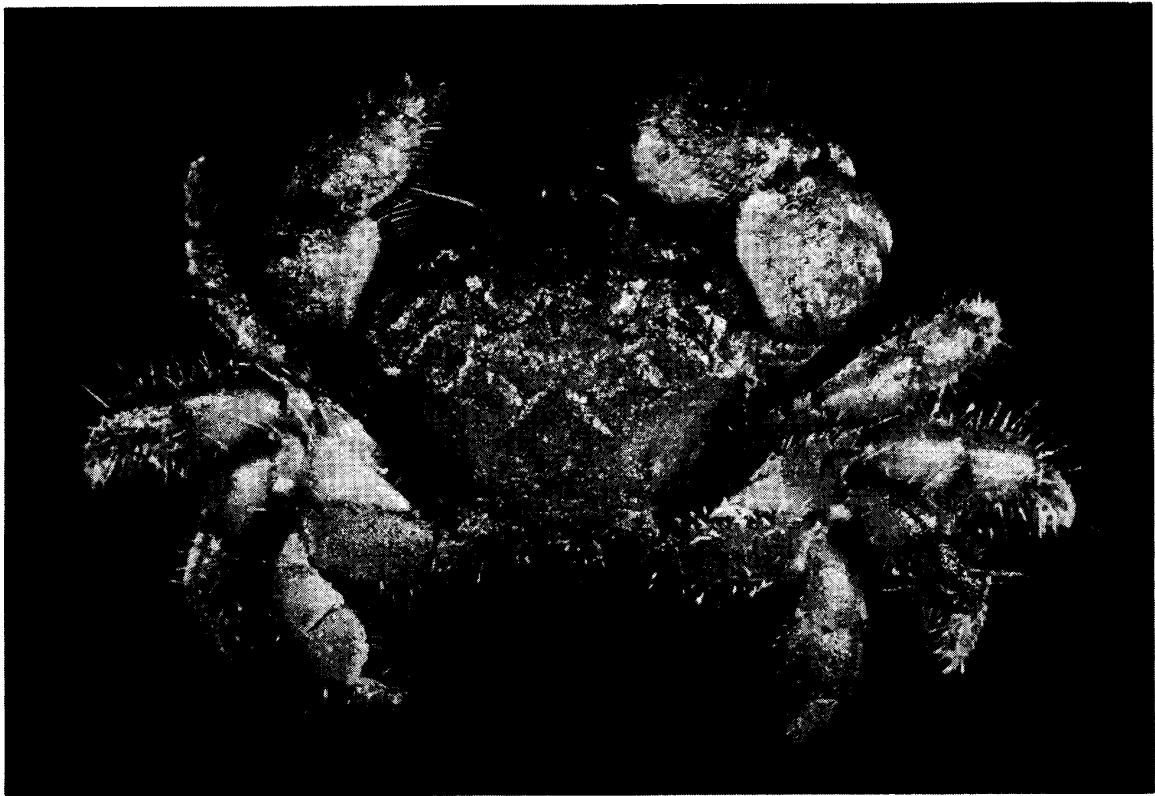


Fig. 1. *Globopilumnus kiiensis* sp. nov., holotype ♂ (NSMT-Cr 8687).

tooth, the latter of which is separated from the former by a deep notch; in holotype the arch of main lobe is rather regular, but in paratypes there is a low mound with a blunt small granule. Posterolateral border of carapace weakly convex for its anterior part and convergent posteriorly.

Third maxilliped rather sparsely and uniformly covered with long setae; ischia and meri of both sides narrowing distally and proximally, respectively, and thus leaving a rhomboidal hiatus, in which large distal three segments of both sides are folded.

Chelipeds distinctly unequal and covered with a velvet-like tomentum and sparse longish setae, being fringed with longish, more or less comb-like setae on inner margins of merus and carpus and both margins of palm; merus rather small and hidden beneath carapace for its most part, its upper margin being sharply crested, with a subdistal notch; carpus larger and distally ornamented with a submarginal groove; its inner upper margin rather distinct, with a row of some granules and setae, its distal end being tipped with a blunt conical granule of good size; palm heavy, especially in larger cheliped; its outer surface thickly covered with conical granules which are not markedly different in size; fingers short.

Ambulatory legs stout and covered with a characteristic tomentum and setae of variable length just like chelipeds; setae arranged on margins of meri and carpi and also on upper surfaces of propodi and dactyli; each merus unarmed, having a subdistal notch on anterior margin.

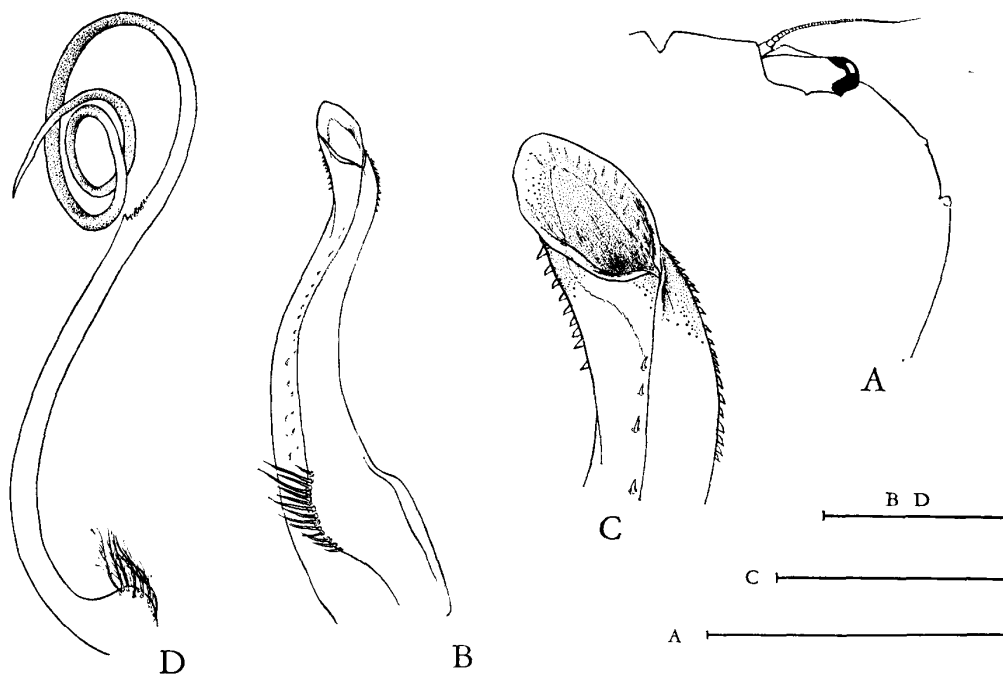


Fig. 2. *Globopilumnus kiiensis* sp. nov., paratype ♀ (NSMT-Cr 8688) (A) and holotype ♂ (NSMT-Cr 8687) (B-D). — A, contour of carapace showing frontorbital and anterolateral borders; B and C, first pleopod; D, second pleopod. Scales for A=5 mm, B and D=1 mm, C=0.5 mm.

In life the tomentum is uniformly light chocolate brown and the true surfaces of the carapace, chelipeds and ambulatory legs are purple.

Type-specimens. Holotype (♂, NSMT-Cr 8687, 11.5×9.3 mm), paratypes (1 ♀, NSMT-Cr 8688, 9.4×7.8 mm; 1 ♂, 1 ♀, SMBL type 333, 8.2×7.1, 7.0×5.8 mm); Shiono-misaki, Kushimoto, southernmost place of Kii Penin., 60–70 m deep, from scleractinian coral *Dendrophyllia ijimai* YABE et EGUCHI [Jap. name: Kisango]; Feb. 10, 1978; S. NAGAI coll.

Remarks. The excellent contribution by GUINOT-DUMORTIER (1959) revealed that the genus *Globopilumnus* was correctly placed in the then Menippinae of the Xanthidae. According to her, the genus is represented by three Indo-West Pacific species, *G. globosus* (DANA, 1852), *G. actumnoides* (A. MILNE EDWARDS, 1873) and *G. calmani* BALSS, 1933, and two West African species, *G. africanus* (A. MILNE EDWARDS, 1867) and *G. stridulans* MONOD, 1956. The general appearance of the carapace, chelipeds and ambulatory legs is very close to that of *Pilumnus* or *Actumnus* of the Pilumnidae, but as mentioned elsewhere, the male second pleopod is filiform and distinctly longer than the first.

The new species is characteristic in having the velvet-like tomentum which is of a more or less labyrinth appearance with symmetrical grooves on the carapace. Five known and one new species are distinguished from each other as in the following key.

1. With stridulating organs on chelipeds and ambulatory legs.....2
- Without stridulating organs.....4
2. Five strong spines on anterolateral border of carapace. (Carapace covered with sparse stiff setae. A patch of granules for stridulation usually on first and second ambulatory meri.).....*G. calmani* BALSS
Globopilumnus calmani BALSS, 1933, p. 9, pl. 1 (6, 7); GUINOT-DUMORTIER, 1959, p. 110, figs. 9–13.
- Five usual teeth on anterolateral border of carapace.....3
3. Carapace covered with dense setae. A patch of granules of stridulation only on first ambulatory merus.....*G. africanus* (A. MILNE EDWARDS)
Pilumnus africanus A. MILNE EDWARDS, 1867, p. 280; MIERS, 1886, p. 150, pl. 13 (1); CAPART, 1951, p. 143, fig. 51, pls. 1 (15), 3 (7, 8).
Globopilumnus africanus: MONOD, 1956, p. 227, figs. 249–257.
- Carapace covered with sparse setae. A patch of granules of stridulation each on first to third ambulatory meri.....*G. stridulans* MONOD
Globopilumnus stridulans MONOD, 1956, p. 230, figs. 258–269.
4. Carapace covered with short velvet-like tomentum. (Anterolateral border of carapace armed with a wide lobe and a granule-tipped tooth; posterolateral border convergent. Ambulatory legs unarmed.).....*G. kiiensis* sp. nov.
- Carapace covered with thick stiff setae5
5. Anterolateral border of carapace armed with four or five small subequal tubercles; posterolateral borders of both sides subparallel. Ambulatory legs unarmed....
.....*G. globosus* (DANA)

Pilumnus globosus DANA, 1852, p. 236; 1855, pl. 13 (10); DE MAN, 1890, p. 59, pl. 3 (3).

Pilumnus ovalis A. MILNE EDWARDS, 1867, p. 280.

Pilumnus margaritatus ORTMANN, 1893, p. 436.

Globopilumnus globosus: BALSS, 1933, p. 7, pl. 1 (1, 2); SAKAI, 1939, p. 514, pl. 98 (3); 1976 p. 470, pl. 171 (3); GUINOT-DUMORTIER, 1959, p. 99, figs. 1, 2, 5, 6; EDMONDSON, 1962, p. 285, figs. 24 (d, e), 25 (d).

Globopilumnus globosus spinosus BALSS, 1933, p. 7.¹⁾

- Anterolateral border of carapace armed with six or seven tubercles, posterior four or five of which are larger; posterolateral borders convergent. Ambulatory legs armed with a distal spine on each propodus of first three pairs.

. *G. actumnoides* (A. MILNE EDWARDS)

Pilumnus actumnoides A. MILNE EDWARDS, 1873, p. 247, pl. 10 (3).

Globopilumnus actumnoides: BALSS, 1933, p. 8, pls. 1 (5), 7 (34); SAKAI, 1939, p. 515, fig. 46; 1976, p. 470, fig. 251; GUINOT-DUMORTIER, 1959, p. 104, figs. 3, 4, 7, 8.

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1) The validity of this subspecies is not certain. Two female specimens from Singapore were only shortly remarked in the original definition as having many sharp granules on the dorsal surface of the carapace.